

ABSTRACT OF THE DISCLOSURE

A processing technique of a semiconductor substrate which can improve a capability of a solid immersion lens in case of processing the semiconductor substrate and forming the solid immersion lens on its surface is provided.

A focused ion beam (5) is irradiated on a semiconductor substrate (1), and a salient part (2) acting as a solid immersion lens is formed on its main surface (3a). At this time, a cutting amount of the semiconductor substrate (1) by the focused ion beam (5) is adjusted by making the irradiation time of the focused ion beam (5) to the semiconductor substrate (1) change. According to this, a surface of the salient part (2) has a curved surface of high precision, and a capability of the salient part (2) as the solid immersion lens is improved.